Addendum A
to the Final Environmental Impact Statement
for the

POWER SUPPLY UPGRADE – ALGOOD 161-KV TRANSMISSION LINE

Putnam County, Tennessee

Responses to Comments Received
on the
Draft Environmental Assessment

TENNESSEE VALLEY AUTHORITY

MAY 2008

Page intentionally blank

Summary of Comments – Algood Transmission Line

A total of 45 persons provided comments on Tennessee Valley Authority's (TVA) draft *Power Supply Upgrade – Algood 161-kV Transmission Line Environmental Assessment* (EA). Comments were received by regular mail, by e-mail, via a TVA Internet site, and some were hand-delivered. The list of individuals and any organization that was identified as being represented by a commenter are listed below.

Commenter Name	Affiliation or Organization Represented
Wendy Askins	Upper Cumberland Development District
Michael Atchison	Tennessee Department of Economic and Community Development
Lee A. Barclay	U.S. Fish and Wildlife Service
LeBron and Keeble Bell	
Janice Blaylock	
William P. Bonner	
Harold Boswell	
Janice Boswell	
J. Mark Cantrell	Alliance for Native American Indian Rights of Tennessee
Gary A. Davis, Esq.	Buck Mountain Community Organization
Cathy Dyer	
Peggy Evans	
J. C. Finch	
Dr. Richard C. Finch	
Dean Freitag	
Louise Gorenflo	
Jewell M. Hall	
Marilee Hall	
Ada Haynes	
Paul R. Isbell	
Bower L. (Bob) Johnston	
Jon Jonakin	
Lawrence R. Klem	
Robert and Velda Koger	
Mary M. Mastin	Upper Cumberland Group, Sierra Club
Silas Mathes	Tennessee Department of Environment and Conservation, Division of Natural Areas
Hugh Mills	
Diane Moore	
Vincent Neary	
Danny L. Newton	
Valerie Ohle	Tennessee Commission on Indian Affairs
Edith Phipps	
Fred Ray	
Michael Richardson	
Kate Scurlock	

Commenter Name	Affiliation or Organization Represented
Don Shockley	
Sullivan Smith, M.D.	
Scotty D. Sorrels	Tennessee Department of Environment and Conservation, Water Supply
Barry Stein	
Robert M. Todd	Tennessee Wildlife Resources Agency
Mark Tummons	Tennessee Department of Environment and Conservation, Division of Recreation Educational Services
Larry Webb	Upper Cumberland Development District
Jonathan Williams	
Randal D. Williams	Upper Cumberland Development District

Several common themes were apparent in comments. In order to prevent unnecessary repetition, similar comments made by multiple individuals are presented below as a single paraphrased comment. Every effort has been made to retain the intent of each comment. Those comments unique to an individual are identified by quotation marks. These comments were not paraphrased and are presented below as they were received by TVA. The names of individuals making a particular comment are listed in parentheses following the comment.

The comments and TVA's responses to those comments are presented below. Comments and respective responses have been placed into categories and are presented in an order similar to the organization of the EA. TVA has responded to all substantive comments, either in this addendum or by revising the text of the EA.

All correspondence received during the comment period has been reproduced and is presented as Addendum B.

Category: In Favor of or No Objection to the Proposed Transmission Line

Comment #1: The proposed project is needed; the proposed transmission line route is acceptable. An adequate power supply is needed in the Algood area. Less homes would be affected by the proposed route than by other routes. (Wendy Askins, Michael Atchison, Jewell Hall, Robert and Velda Koger, Diane Moore, Edith Phipps, Don Shockley, Robert Todd, Mark Tummons, Larry Webb)

Response: Comment noted.

Other commenters were opposed to the project, objected to the routing of the proposed transmission line, or expressed concerns about the analysis of potential effects to various resources. These comments are presented below.

Category: Need for Additional Environmental Review

Comment #2: TVA should prepare an environmental impact statement (EIS). (Janice Blaylock, Harold Boswell, Janice Boswell, J. C. Finch, Ada Haynes, Mary Mastin, Paul Isbell, Barry Stein) TVA should prepare an EIS because there will be significant impacts from the proposed project. (Gary Davis, Louise Gorenflo, Barry Stein)

Response: TVA has prepared an environmental assessment (EA) under its procedures for implementing the National Environmental Policy Act (NEPA) and in accordance with the Regulations (40 CFR Parts 1500-1508) promulgated by the Council on Environmental Quality. Following the completion of this EA, TVA will either issue a finding of no significant impact or prepare an environmental impact statement (EIS). As described in this EA, TVA has not yet identified any significant impacts that would result from the proposed project.

Comment #2a: TVA should prepare an EIS because the project is controversial. (Gary Davis, Barry Stein)

Response: Comment noted. Although some local residents oppose the proposed transmission line, others are supportive.

Comment #2b: TVA should prepare an EIS because important information was withheld. TVA has failed to provide all underlying documentation as required by applicable regulations. (Barry Stein, Mary Mastin)

Response: Comment noted. After public scoping, including an open meeting to obtain the views of officials, the public, and potentially affected property owners on the proposed action, a draft environmental assessment (EA) was made available to the public for review and comment. The 30-day comment period was extended an additional 15 days. The comments received and the responses to those comments appear as an addendum to the final EA. Similarly, correspondence from commenting state and federal agencies, including those agencies exercising jurisdiction over some aspect of the proposed project are included in Appendix A of the EA. The draft EA and the final EA were made available to the public at no

charge. The EA contains or summarizes information about the proposed action.

Category: Need for the Project

Comment #3: The project is not needed. TVA did not adequately identify the purpose and need for the proposed action. (LeBron and Keeble Bell, Janice Blaylock, Harold Boswell, Janice Boswell, Gary Davis, J. C. Finch, Richard C. Finch, Louise Gorenflo, Marilee Hall, Ada Haynes, Lawrence Klem, Mary Mastin, Vincent S. Neary, Danny L. Newton, Barry Stein)

Response: As stated in Section 1.2, the proposed transmission line is needed to supply power to the new Algood 161-kilovolt (kV) Substation being constructed by the Upper Cumberland Electric Membership Corporation (UCEMC). UCEMC is constructing this new Algood 161-kV Substation because the existing Algood 69-kV Substation is essentially at its capacity. The power for the new substation would come directly from a TVA transmission line rather than from intermediate substations. A secondary benefit of the project would be the decrease in load on TVA's West Cookeville 161-kV Substation. Section 1.2 has been revised with additional information to better explain the need for TVA's proposed actions.

Comment #3a: Important information needed to justify the project was withheld. (Harold Boswell, Gary Davis, J. C. Finch, Richard C. Finch, Ada Haynes, Paul Isbell, Jon Jonakin, Mary Mastin, Vincent S. Neary, Danny L. Newton, Kate Scurlock, Barry Stein)

Response: See the response to Comment #2b. The EA contains information explaining the need for the proposed action. The Buck Mountain Community Organization filed a request to TVA under the Freedom of Information Act. On April 10, 2007, TVA responded to that request by supplying a copy of the document entitled "One Ownership Study, Upper Cumberland EMC, South Carthage, TN, Algood Substation" to Mr. Paul Isbell. This report was prepared by PowerTech Engineering LLC of Tucker Georgia in July 2006. Certain portions of the report that were proprietary to the business operations of UCEMC were redacted. TVA also provided a document entitled "Project Justification Data," which included a detailed description of the need for the project. Information explaining why the project is needed was provided on the TVA Web site at: www.tva.gov/power/projects/cookeville_tn/why.htm. Additional information has been provided to include summer 2007 historical loadings.

Comment #3b: Anticipated increases in power demand used to justify the project are not likely to occur because plans for a large apartment complex have been cancelled, new industries are not locating in the Algood area, and housing markets are declining. These estimates were erroneous. (Harold Boswell, Gary Davis, Louise Gorenflo, Ada Haynes, Paul Isbell, Jon Jonakin, Mary Mastin, Danny L. Newton, Barry Stein)

Response: TVA relied on the best estimates and forecasts available when it prepared the draft and final EAs. These estimates included the possibility that the above-mentioned development would occur. A number of local

newspaper articles have described expected new growth including a new hospital wing, three new schools (one of these at Algood), and expected company expansions. The following new commercial loads have been added to the Algood Substation in the 2004-2007 time frame: Air Experts, AutoZone, Cavenders - The Interior Store, Checks Unlimited, China Wok, Cookeville Limestone, Dukes Restaurant, First National Bank, Jackson Bank & Trust, Movie Gallery, Murphy Oil station, One Hour Martinizing, Potters Ace Hardware, Sequatchie Concrete, Shell gas station, Sonic, Subway, Upper Cumberland Family Dentistry, Verizon, and Wal-Mart. Additionally, at least 50 residential customers were added in 2007 within the city limits of Algood.

The following loads are projected to be added to the Algood substation in 2008: a school addition, a restaurant, a church expansion, three duplexes, a subdivision, and 21 apartments. A number of new homes are under construction near the White Plains Golf Course, and several lots are being prepared for construction in this same area. The Haven Hill Subdivision is currently under construction, and new townhomes just off West Main Street are under construction. There are a number of commercially zoned properties for sale along West Main Street. This growth will likely increase the power demands placed on the Algood Substation. The loading at the Algood Substation has already exceeded the firm capability of transformers during peak demand periods over the last three years without these anticipated new developments. Therefore, additional residential and commercial developments will exacerbate the situation.

Comment #3c: About 1,200 UCEMC customers were taken by Cookeville Electric Department (CED) via annexation; thus, there will be less demand on the Algood Substation. (Harold Boswell, Gary Davis, Ada Haynes, Paul Isbell, Mary Mastin, Barry Stein)

Response: *Recent annexation by the City of Cookeville could affect as many as 1,200 UCEMC customers. Because the annexation involved multiple areas around Cookeville, these customers are located in various locations around the city. Of these customers, about one-third are served by the Algood Substation (approximately 370 electric meters). The load from these 370 meters would amount to less than 1.5 megawatts (MW). This amount would not sufficiently reduce the load on the Algood Substation to ensure continued reliable service.*

Comment #3d: "As mentioned by Mr. Lanzalotta, the evaluation of purpose and need in the DEA failed to consider the annexation of UCEMC customers by the City of Cookeville and the court-approved UCEMC reintegration plan, both of which contradict the need for the proposed new Algood substation and transmission line." (Gary Davis) "First, the reintegration plan would accomplish one of the stated needs in the Draft EA by removing UCEMC loads from the TVA West Cookeville substation. But instead of building a new Algood substation and a new 161 kV transmission line to serve that substation, the plan would build a new UCEMC substation on the opposite side of Cookeville on Benton Young Road directly under and fed by TVA's existing 161/69 kV

transmission line. The plan would also build a new UCEMC loop around Cookeville connecting this new substation to the existing Algood substation using existing poles and rights of way. This new substation and loop would provide additional reinforcement to the Algood substation and obviate any need for a new transmission line from the West Cookeville substation to the Algood substation." (Gary Davis) "The new substation that Cookeville Electric was ordered to build for UCEMC was not taken into consideration." (Ada Haynes)

Response: *The potential reduction in demand from the loss of UCEMC customers is addressed in the response to the previous comment.*

The annexation issue is still in litigation at this time, and there is no final reintegration plan available for execution now. Assuming the proposed reintegration plan is approved, as mentioned in Mr. Lanzalotta's comments, a new substation would be built on the west side of Cookeville. This arrangement would not necessarily remove any load from the existing Algood Substation because a new west side substation would serve UCEMC customers who are currently provided power from the Cookeville District Substation.

Comment #3e: Energy conservation measures were not considered in the energy demand projections. (Ada Haynes, Barry Stein) TVA should implement more energy conservation and demand-side management. This was given inadequate treatment in the draft EA. (Gary Davis, Richard C. Finch, Louise Gorenflo, Ada Haynes, Paul Isbell, Mary Mastin)

Response: *Load Reduction and Energy Conservation were addressed in Section 2.1.3 of the EA. Load reduction and energy conservation plans take time to implement, and increased efforts in those areas would not help to relieve the current loading problem on the Algood Substation. However, TVA already has a number of such programs in place, and they have produced reductions in demand that have reduced the overall peak demand on the TVA system from the level that would exist absent such programs.*

TVA is currently working to assess existing programs, gain an understanding of the market potential for energy efficiency programs in the Tennessee Valley, develop analysis tools and data sets needed to determine program impacts, and define potential new programs. A Long-Term Action Plan for energy efficiency and demand response will be developed.

Incentive programs in place today are currently under review and likely will be modified to support TVA's long-term goal of achieving leadership in energy efficiency and demand reduction across the Valley. TVA anticipates rolling out new programs in late 2008 and early 2009.

Through TVA's Green Power Switch Generation Partners Program, TVA purchases 100 percent of the renewable energy generated by consumer-installed solar and wind systems. As of January 24, 2008, there are 41

active installations with a combined generating capacity of 229.45 kilowatts.

Among the most successful of TVA's programs is the energy right® Residential Program, which was launched in 1996. By 2007, TVA achieved approximately 523 MW of peak load reduction Valley-wide through implementation of the energy right initiatives. These initiatives promote high-efficiency heating, ventilating, and air conditioning (HVAC) systems, better thermal envelopes, and other measures that save energy and reduce peak demand for Valley residents. The impacts from these programs are expected to grow steadily with continued annual participation. The energy right Residential New Homes Program promotes higher-efficiency thermal envelope standards and quality construction in new homes and the installation of energy efficient heat pumps. This program provides training for homebuilders and trade allies to ensure proper installation of energy efficiency measures.

The energy right Residential Manufactured Homes Program focuses on achieving improvements in the HVAC and thermal envelope components of manufactured housing. This program requires the participating home to be equipped with an energy efficient heat pump. Additional information on energy right programs may be accessed at the following Web site: www.energyright.com

Another popular TVA/power distributor program offers energy services to businesses and industries. These services lower the customer's energy use, making the businesses more competitive, and helping TVA reduce peak loads on its power system. This energy services initiative provides technical expertise, project management support, and third-party financing to assist commercial and industrial customers with energy efficiency upgrades and operational improvements.

TVA and power distributors also offer a variety of pricing options that give large energy users incentives to manage their electricity use. Through a combination of programs, we have successfully reduced energy consumption for hundreds of businesses and schools throughout the region. Additionally, TVA/power distributor support for geothermal heat pumps has been instrumental in implementing this technology in more that 100 schools in the Southeast.

Category: Consideration of Other Options

Comment #4: TVA should consider other available options to reduce loads that would not involve building a new transmission line. (Ada Haynes, Mary Mastin)

Response: TVA considered various options. Several were considered either ineffective or infeasible for a variety of reasons. Section 2.1.3 has been revised to address this matter more fully.

Comment #4a: TVA should consider or implement distributed generation. Distributed generation was given inadequate treatment in the draft EA. (Gary Davis, Ada Haynes, Mary Mastin, Barry Stein)

Response: The possibility of using distributed generation to avoid constructing additional transmission lines is discussed in Section 2.1.3 of the EA. As stated in that section, drawbacks of distributed generation include high costs, long start-up periods, power supply reliability, and associated environmental issues.

Comment #4b: Redistribute customers to other substations. This was given inadequate treatment in the draft EA. (Ada Haynes, Mary Mastin)

Response: See Section 2.1.3. The Cookeville Electric Department (CED) and UCEMC are responsible for distributing electric power to the residential, commercial, and industrial power consumers in the Cookeville area. TVA supplies power to these two distributors. As stated in Section 1.2, TVA's West Cookeville 161-kV Substation supplies power to three local CED substations and to the existing UCEMC Algood 69-kV Substation. Redistribution of the demand to these other substations would not reduce the overall load on the West Cookeville Substation, which is nearing its capability. Redistribution of customers to other substations would be the responsibility of CED and UCEMC and would likely involve considerable expense to install or replace distribution lines.

UCEMC does not have the ability to transfer additional loads away from Algood due to loading on other substations and annexation issues, which will likely require UCEMC to remove all load from the closest substation to Algood (Cookeville District, which is across town from Algood). The plan currently calls for UCEMC to construct another substation on the west side of the city. This new substation will possibly be located outside Cookeville's Urban Growth Boundary to avoid service area conflicts between UCEMC and CED. This will not help with the ability to transfer load from Algood due to the distance between sources.

Comment #4c: Use the Cookeville Electric Department (CED) proposal to shift 16 MVA to South Cookeville Substation rather than going through West Cookeville or East Cookeville Substations. (Gary Davis)

Response: TVA and CED are reviewing the possibility of implementing a CED plan to remove some load from the TVA West Cookeville Substation. The plan involves construction of two 13-kV distribution lines from the CED South Cookeville 161-kV Substation (see Figure 2 in the EA). One of these lines would supply CED customers in the area of the Cookeville District Substation. The other line would be used to supply power to customers in recently annexed areas of east Cookeville. These new distribution circuits would supply about 16 MW of load currently supplied by the East Cookeville and Cookeville District substations. This plan would not provide a new power supply to the East Cookeville Substation. However, it would transfer load from the East Cookeville Substation to the South Cookeville Substation. This would remove some load from the West

Cookeville transformer bank. Unfortunately, this plan would not reduce the load on the Algood Substation or alleviate the potential overloading of the Algood Substation.

Although this proposal would provide some temporary relief at the West Cookeville Substation, load growth in the Cookeville area will likely load these transformers to capability within three to four years in the absence of the new Algood 161-kV Substation. At least three delivery point projects, including South Cookeville, have been completed since 1997 to remove load from the West Cookeville Substation. Nevertheless, area growth continues to push the transformers in the West Cookeville Substation to capacity.

Comment #4d: Use Tennessee Tech's 8 MW generator for peaking and/or for backup power in an emergency. (Gary Davis, Ada Haynes, Mary Mastin)

Response: See Section 2.1.3.

Comment #4e: "Also, the City of Cookeville has stated that they have excess power that they would provide to Algood if it were needed." (Paul Isbell)

Response: Supplying additional power to the Algood 69-kV Substation using the existing power distribution system would not prevent an overload situation at the substation. The equipment in the substation would remain subject to becoming overloaded.

Comment #5: "A solution would be for TVA to reinstate the incentives for interruptible power to TTU. This would allow for the peak demand to be removed from the TVA West Cookeville substation since TTU indirectly gets their power from the TVA West Cookeville through Cookeville Electric's West Cookeville substation. This would allow time for more effective planning." (Ada Haynes)

Response: Removing load from West Cookeville is a priority, but it does not help alleviate loading at the existing Algood Substation. Also, see Section 2.1.3 in the EA.

Comment #6: "I would also like to understand whether or not an alternative route has been considered. I am told that an alternative route along Hwy 111 Right of Way was suggested. It is already developed, and the property could be shared with TDOT- it seems like a workable solution, one that would not require so much destruction." (Marilee Hall) Use State Route 111 right-of-way. (Lee Barclay, J. C. Finch, Richard C. Finch, Marilee Hall, Lawrence R. Klem, Vincent S. Neary, Fred Ray, Michael Richardson, Jonathan Williams)

Response: TVA considered several route options, as described in Section 2.3.3. A route along State Route (SR) 111 was considered early in the planning process. However, for several reasons, including the likelihood that residences would be taken for the right-of-way, this route option was eliminated. Section 2.1.3 of the EA has been supplemented with additional information about the SR 111 option.

Comment #7: Use existing infrastructure. (Cathy Dyer, Peggy Evans)

Response: We assume that the comment deals with routing the transmission line along SR 111 or perhaps upgrading the existing 69-kV transmission line serving the Algood 69-kV Substation to 161-kV. The EA has been supplemented, and these options are discussed in Section 2.1.3.

Category: Methodology

Comment #8: The routing methodology is flawed (not transparent). (Gary Davis, Ada Haynes)

Response: The discussion of methodology has been expanded. See Section 2.3 of the EA.

Comment #8a: "TVA eliminated all routes except for Alternative 1 from consideration before assessment of alternatives in the Draft EA." (Gary Davis)

Response: This is incorrect. As explained in Chapter 2, TVA evaluated a number of different alternatives, including alternative line routes for the preparation of this EA. At the stages of its analysis, TVA brings in and considers more detailed information, including comments, concerns, and alternatives identified by the public and potentially affected property owners. This allows TVA to concentrate its analytical resources on those alternatives that hold the most promise for meeting project needs in cost-effective and environmentally acceptable ways. It also lets members of the public focus their attention on the more promising alternatives.

Comment #8b: "Having consistent and non-arbitrary guidelines for completing the matrix is particularly important in that all other routes than the one selected as the preferred route go through the family farm of a UCEMC Board member. This is a major conflict of interest." (Ada Haynes)

Response: TVA's process for siting transmission lines ensures no one receives preferential treatment. In fact, during initial siting, the identity of individual property owners is unknown.

Comment #8c: "These alternative routes were established and eliminated using a subjective methodology which included a mixture of engineering, environmental, land use, and cultural criteria. Although the considerations for each type of criteria were explained in the Draft EA, there was no basis provided for how any of the routes were established, why others were not considered, how specific indicators for the four types of criteria were chosen, for how scores were assigned to each of the routes for these indicators, how these scores were summed to generate an overall score for each route, and how the different criteria were weighted in comparing routes (e.g., how engineering criteria were balanced with engineering criteria)." (Gary Davis)

Response: See Section 2.3 through 2.5 of the EA. TVA has modified the text of the EA in response to this comment and similar comments to explain better the evaluation process that it uses. Routes for this proposed action were identified based on tap point locations and using opportunities and constraints. Other routes were examined at stages in the analysis but were eliminated using the same process of opportunities and constraints

using all available information. TVA's evaluation model is based on statistical analysis using a standard deviation model, which utilizes a standard set of criteria in TVA's siting model (see Sections 2.3.4 and 2.3.5 of the EA). Application of the criteria and TVA's model is flexible. Criteria can be added or subtracted to better represent existing conditions. Weighting of criteria is standard in most cases, but we do change weighting on occasion when the impact of a particular criterion is considered more detrimental than in normal situations. For this project, a new weighting category was established for houses within 50 feet of a potential right-of-way. Consequently, the line segments with houses within 50 feet received a less favorable (higher) score.

Comment #9: "The "'Fact Sheet' provided by TVA as the basis for its selection of the preferred route does not adequately explain or document the use of a methodology for selecting the preferred route. For each of the types of criteria 'opportunities and constraints' were selected, by the Fact Sheet does not explain how these particular indicators of opportunities and constraint used in Table 1 were selected from among the universe of indicators that could be applied to transmission line siting. Further, the ranking of routes was performed before any field review had been performed, and some of the conclusions used to rank Alternative 1 as preferred compared to the others have been contradicted by the field data. Table 1 clearly skews indicators in this case by having 3 different environmental constraints that would be applied to any route through Booger Swamp, where the existing transmission line is already located (Wetland acres, special protected areas, and natural areas), as compared with only one environmental constraint that would apply to most of the route over Buck Mountain (forest acres). It also skews indicators by having 4 different indicators of land use constraints for proximity to houses, ensuring that any route through a more populated area would show the most land use constraints."

"Somehow, after Table 1 was filled out without field data, TVA narrowed the alternative routes to 6 routes and ranked them using Table 2. There was no description of the methodology for eliminating the other 11 routes at this point and no description of how the relative ranking was performed. Did TVA simply add the numbers in each type of criteria engineering, environmental, land use, and cultural) and choose the lowest numbers for each? This would be worse than adding apples and oranges; at least they are both fruit. The magnitude of impact represented by each of the numbers is not comparable and additive. Then somehow after achieving rankings by criteria for each route, TVA selected Alternative 1 as preferred. Was this done by adding the relative ranking numbers? If so, this would be profound mathematical error, because these numbers are on an ordinal scale, not an interval scale. For an ordinal scale all the can be said is that a '2' is higher than a '1', not that '2' is twice as high as '1' or that the interval between '1' and '2' is the same as the interval between '2' and '3'."

"TVA has implicitly expressed environmental preferences without scientific justification in its use of this ranking system. For instance, TVA clearly prefers routes that avoid wetlands as compared to routes that avoid destroying forest. It is likely that the route through wetlands, however, would have less overall acreage impacts on wetlands vegetation than the route through forests would have on forest vegetation, because in wetlands the only permanent clearing that would need to be done is for the power poles themselves, because wetlands vegetation in this area does not achieve heights that would threaten the transmission lines. On the other hand, the whole swath of forest would be permanently destroyed. TVA has

also implicitly expressed preferences regarding land use constraints, selecting as preferred the route that crosses the fewest parcels of land. The preferred route crosses only 2 fewer parcels than the Alternatives 11 and 12, making the distinction meaningless."

"The Draft EA states that '[e]valuation of the alternative routes for the number of road crossing and existing transmission lines affected resulted in no major constraints along any of the alternative routes.' If all of the routes were feasible from an engineering standpoint, then they all should have been evaluated in the Draft EA for their relative environmental impacts." (Gary Davis)

Response: The siting process is discussed in detail in Section 2.3.1 through 2.3.5 of the EA. After evaluations were begun, we detected a natural break between the top six alternative routes and the bottom 11. As mentioned, environmental issues are an important part but only one part of the evaluation.

Comment #10: "The analysis of environmental damage caused by the construction of the proposed transmission line across Buck Mountain is grossly underestimated. In fact, the criteria used by TVA to rank environmental and cultural impact are at best arbitrary and capricious. Specifically, those criteria assign little or no value to the destruction of over 12,000 trees in the ROW which is two to three times the magnitude of other available routes. The TVA criteria for route selection also assigns little or no value to significant Native American archeological and cultural evidence in the area. As such, it seems that this project and all other TVA construction projects should be halted until full NEPA environmental impact studies have been completed or until criteria for route selection are developed and applied that are not arbitrary and capricious and that recognize the true environmental value of trees and Native American culture." (Barry Stein)

Response: Potential environmental effects from the construction of the proposed transmission line are discussed in Chapters 3 and 4. The extent of required clearing of forested areas is one of several factors used in the route identification process. The avoidance of known archaeological and historical resources was a factor in deriving the 18 route segments. TVA performed additional archaeological surveys within the area of potential effects of the preferred route.

Comment #11: "It is particularly troubling that all of the alternative routes except the preferred alternative were fairly similar and were routed through Booger Swamp which contains protected wetlands." (Gary Davis)

Response: Route segments 8, 11, and 12 cross Booger Swamp Protection Planning Site, as shown in Figure 3. These routes were developed using the methodology described in Section 2.3. During the routing process for a transmission line, some potential routes may cross wetland areas. If the final route crosses wetlands, TVA implements appropriate mitigation measures.

Comment #13: "Neither the right of way for the existing transmission line to the Algood substation nor the straightest and widest highway right of way (Highway 111) was evaluated in the matrix or the Draft EA. In a letter to Ms. Ada Haynes TVA stated its basis for eliminating a Highway 111 route as a desirable option, but did not state that it was not a feasible route." (Gary Davis)

Response: TVA expanded the discussion of potential route options in Section 2.1.3.

Comment #12: "The Draft EA does not comply with these NEPA requirements, because it does not address several reasonable alternatives that will accomplish the project purposes without building any new transmission line with its attendant adverse environmental impacts." (Gary Davis)

Response: TVA did consider a range of alternatives including alternatives that did not involve construction of new transmission lines. See Section 2.1.3.

Category: Environmental Effects (General)

Comment #14: The analysis of potential environmental effects is inadequate. (Gary Davis, Barry Stein)

Response: TVA's analysis of environmental effects is addressed in Chapter 4.

Comment #15: "The damage caused by the loss of forest (contiguous forest in particular), potentially endangered species, wetlands, water quality and cultural impact have not been fully reported." (Ada Haynes)

Response: The loss of forest habitat from construction and operation of the proposed transmission line is described in Section 4.1. Potential effects to endangered species are identified in Section 4.3. Potential wetland impacts are described in Section 4.7. The potential effects to water quality appear in Sections 4.4 and 4.5, while impacts to cultural resources (archaeological and historic resources) are described in Section 4.9.

Category: Effects to Terrestrial Life

Comment #16: "At an average density of about 400 trees per acre (e.g. Raile and Leatherberry, 1988), over 12,000 trees will be destroyed with an environmental value of over $2 billion." (Barry Stein)

Response: As stated in the EA, clearing of approximately 35.2 acres of forest will be required. Although trees perform a variety of environmental functions, as well as providing timber, a realistic and accurate valuation, much less a monetization, of these benefits remains largely subjective. The "value" claimed here is not a realized cost.

Comment #17: Destruction of 32.8 acres of forest is significant, especially when considering cumulative impacts. (Gary Davis, Louise Gorenflo, Paul Isbell, Mary Mastin)

Response: See Section 4.1.2 of the EA.

Comment #18: Destruction of forest for the right-of-way would cause significant erosion. (Gary Davis, Barry Stein)

Response: See Section 4.4. Precautions are taken routinely during clearing for right-of-way to prevent erosion. These measures are described in Appendices B, C, and D. With these measures in place, significant erosion from clearing operations is not anticipated.

Comment #19: "Even though residents have spotted heron near the right-of-way, myself included, no studies were done to study whether heron existed along the line or to protect heron along the line. In addition, to heron that have been spotted in a pond near the route, two wetlands were identified with the proposed right-of-way. One of the caves owned by Bob Johnston drains into Booger Swamp Protected area. No provisions seem to be made to protect heron or even to study the existence of heron in the area. A full NEPA needs to be conducted to study the existence and impact on heron." (Ada Haynes)

Response: Herons generally inhabit ponds, lakes, streams, and wetlands, and may nest in nearby upland woodlands. The pond near the proposed transmission line route would not be disturbed and would continue to provide suitable heron habitat. As described in Section 4.7, about half an acre of forest wetlands would be affected by right-of-way clearing and converted to emergent/scrub-shrub wetland. This conversion would result in only a minor reduction of the suitability of the wetland as habitat for herons.

Comment #20: "We were not supplied with the full biologists' report." (Ada Haynes)

Response: The results of the biologists' surveys are incorporated into the EA.

Comment #21: "Section 4.1.2 jumps to an erroneous conclusion with the statement that *[a]doption of the Action Alternative would not significantly affect the vegetation of the region. Adoption of this alternative would require clearing of about 32.8 acres of forest including over 10 acres of minimally disturbed oak-hickory and mesic forest located between the substation and Parragon Road*. By comparing 32.8 acres of destruction to the acres of forest in a multi-county area, TVA has turned an environmental assessment on its ear. TVA's survey of the area took place during August and September 2007, there is no comprehensive assessment of the state of the vegetation in the area. And without an adequate assessment of the current baseline, TVA would not be able to state how much impact the vegetation of the region would suffer." (Gary Davis)

Response: A comprehensive description of the vegetation in the project area is provided in Section 3.1.2. As stated, much of it is based on field surveys conducted in August and September 2007. Although some winter and spring-blooming plants may not have been visible in August and September, the potential presence of these plants was considered in the impact assessment. The seasonal timing of the surveys does not affect the assessment of the regional impacts of forest clearing.

Comment #22: "Furthermore, there has been no assessment of the affect the addition of herbicides and other toxins will have on the vegetation of the region." (Gary Davis)

Response: See Section 2.2.2 and Appendix E. TVA employs a number of herbicides in its right-of-way maintenance. These are applied consistent with their labels and by licensed applicators. Care is taken to confine the application of herbicides to rights-of-way and avoid impacting vegetation outside the right-of-way. The purpose and desired effect of the herbicide applications are to control the vegetation within the right-of-way. Only herbicides registered with the U.S. Environmental Protection Agency would be used.

Comment #23: "Further, Section 4.1.2 discusses 'change in the composition of wildlife habitats' from early successional habitats and the resulting change in the 'overall species composition of the area.' As the components of an ecosystem are interdependent, it is a logical conclusion, therefore, that the vegetation of the region would certainly be impacted as the proposed transmission line would increase the amount of successional habitat and decrease the forest habitat." (Gary Davis)

Response: As stated previously, approximately 35.2 acres of forest would be cleared for the right-of-way. In currently forested areas crossed by the proposed transmission line route, this clearing would create an early successional (i.e., "open") habitat in an area that was previously forested. Some wildlife and plant species respond well to these open conditions, while other species that rely on mature forest or shaded habitat conditions do not.

Comment #24: Clearing the right-of-way will cause forest fragmentation. (Louise Gorenflo, Paul Isbell, Ada Haynes)

Response: The anticipated forest fragmentation is described in Section 4.1.2.

Comment #25: Clearing the right-of-way will destroy wildlife habitat. (Lawrence R. Klem, Cathy Dyer)

Response: As stated in Section 4.1.2, approximately 35.2 acres of forested habitat would be cleared for the right-of-way. This would result in a loss of habitat for those wildlife species that require mature forest. However, other species, such as rabbits and some bird species, that prefer forest edges or openings would benefit from the clearing.

Category: Effects to Threatened and Endangered Species

Comment #26: Sampling for threatened and endangered species (especially cerulean warblers, bats, and least trillium) took place during the wrong time of the year to adequately detect all such species. (Janice Boswell, Gary Davis, Louise Gorenflo, Ada Haynes, Paul Isbell, Mary Mastin, Barry Stein)

Response: Qualified biologists conducted field surveys that focused on the proposed transmission line right-of-way and immediately adjacent areas. Prior to conducting the surveys, the biologists familiarized themselves with the listed species potentially occurring in the area and the habitat requirements of those species. Although some species were not readily detectable during the surveys, the presence of suitable habitats for these species was considered in the impact analyses.

Comment #27: "The DEA states *'[n]o designated critical plant habitat is located within the area of the proposed actions*.' However, as TVA's survey period took place during the late summer to early fall of 2007, many species that may exist within the planned corridor were not visible or present during the spring and early summer months." (Gary Davis)

Response: Please see the response to the preceding comment. The term "designated critical habitat" as used in the EA refers to specific areas formally established by the U.S. Fish and Wildlife Service under Section 4(a)(3) of the Endangered Species Act as essential to the conservation of the species and requiring

special management considerations or protection. No designated critical habitat areas occur within the right-of-way of the proposed transmission line or in the immediate vicinity of the proposed route.

Comment #28: There are threatened and endangered species that exist in the corridor route that were not mentioned in the EA, i.e., the Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*) and the northern pine snake (*Pituophis melanoleucus melanoleucus*). (Gary Davis, Barry Stein)

Response: The Carolina northern flying squirrel is restricted to elevations above 4,000 feet in the Blue Ridge Mountains of eastern Tennessee and western North Carolina. It does not occur in the project area or in other areas west of the Blue Ridge Mountains. Thus, it was not mentioned in Chapter 3 or 4 of the EA.

The northern pine snake is state-listed as threatened. Its state rank is S3, which indicates that it is considered rare and uncommon in the state, with 21 to 100 documented occurrences. The global status of this snake is G4T4, which indicates that this subspecies is widespread, abundant, and apparently secure globally, but with cause for long-term concern. It does not have a federal status. This species is known to occur in Putnam County, but the closest record of occurrence of the northern pine snake is over 13 miles from the proposed transmission line route. Thus, the northern pine snake was not mentioned in the text of the EA or included in Table 4, which provided a list of federally listed animals known from Putnam County and state-listed animals reported from within 3 miles of the proposed transmission line route.

Comment #29: "Trees such as the shagbark hickory (Carya ovate) provide homes for bats and other creatures. If a significant number of these trees are removed, the habitat for some threatened and endangered creatures will be immediately diminished." (Gary Davis)

Response: Shagbark hickory trees have large plates of bark that peel away from the tree trunk. These bark plates provide summer roost habitat for Indiana bats. Shagbark hickory trees occur frequently in the Buck Mountain area, and suitable roosting trees occur outside the proposed right-of-way. As stated in Section 3.3.1, most of the forested areas along the proposed route were classified as low-quality Indiana bat habitat, and no Indiana bats were found during mist-net surveys. The loss of shagbark hickory trees within the right-of-way is not likely to adversely affect Indiana bat habitat.

Comment #30: Construction of the line would affect threatened and endangered species e.g., cerulean warbler, Indiana bats, gray bats, and least trillium, that exist on or near the proposed route because their habitats would be disrupted or destroyed. (J. Mark Cantrell, Gary Davis, Louise Gorenflo, Ada Haynes)

Response: Potential effects to threatened and endangered species are described in Section 4.3. As stated in Section 3.3 of the EA, the cerulean warbler is "deemed in need of management" in Tennessee, but it has no federal status. The least trillium has no federal status, but this plant is considered "endangered" at the state level. Both the Indiana bat and the gray bat are federally listed endangered species. TVA has determined that the proposed

action is not likely to adversely affect endangered and threatened species, and the U.S. Fish and Wildlife Service has concurred with this determination.

Comment #31: Methods of cave assessment were deficient. A cave (Red Rag Cave) on the Isbell property was missed. Assessment of caves investigated was deficient (merely looking inside to count the number of bats is insufficient). How were the 20 sample points chosen? This is arbitrary; should have used a sampling method that would find bats. TVA should have extended the bat survey for one to two miles on either side of the proposed ROW, as bats' erratic flight behavior is not likely to remain within the planned route corridor. (Gary Davis, Ada Haynes, Paul Isbell, Mary Mastin, Barry Stein)

Response: *See Section 3.3.1. According to information available to TVA, two caves, known as Red Rag Cave and Phantom Menasse, are located on the Isbell property. A third cave, Alanas Cave, is located near the Isbell property line and may be located on the Isbell property. Red Rag Cave is located approximately 170 feet from the proposed transmission line, Phantom Menasse is approximately 310 feet from the line, and Alanas Cave is over 500 feet away. A survey of bats emerging from Red Rag Cave on June 25, 2007, yielded six bats. This indicates that this cave is not inhabited by large, important bat colonies during the summer. Because of their distance from the proposed right-of-way, Phantom Menasse and Alanas Cave would not be affected by the transmission line. No other caves were found on the Isbell property during our field investigations. TVA would appreciate receiving any information local landowners have regarding use of caves or other areas along the proposed route by any threatened or endangered species.*

The sampling methodology was consistent with established protocols. The sample points were located within areas that were most likely to provide suitable bat habitat. Because of the diverse nature of forest characteristics, the presence of mature forest areas was sporadic. Thus, a typical transect arrangement was not suitable. The survey was conducted in forested areas along the proposed right-of-way and focused on detecting and evaluating suitable Indiana bat roosting habitat that could be affected by the construction of the right-of-way for the proposed transmission line. Sampling 1 to 2 miles on either side of the right-of-way would not serve this purpose.

Comment #32: "If the caves are interconnected, then protecting only the caves nearest the power line would not fully protect the endangered bats. Due to the large number of caves and sink holes in the area (both documented and undocumented), interconnectedness of the caves is a major possibility." (Ada Haynes)

Response: *Due to the karst nature of the area, interconnectedness of local caves is possible. Implementing measures to protect caves and cave entrances near the proposed right-of-way is a logical and effective way to avoid adverse effects to any endangered species, including bats, which may be inhabiting such caves.*

Comment #33: "A full NEPA needs to be conducted to study the impact on Cerulean Warblers. If Cerulean Warblers are in the area, cutting the contiguous forest would cause irreparable harm to this threatened species." (Ada Haynes)

Response: Potential impacts to cerulean warblers have been considered in the preparation of this EA. Cerulean warglers are not federally listed as threatened or endangered species. As stated in Section 4.3.2 of the EA, construction of the proposed transmission line would reduce the suitability of the affected tracts of forest for cerulean warblers. Both the rangewide and regional populations of the cerulean warbler are experiencing a significant long-term decline. Even if a few pairs of cerulean warblers are in the project area and are lost, this would have only a minor cumulative impact on the species.

Comment #34: "TVA acknowledges that endangered fish and mussels are in the watershed fed by the area covered by this transmission line. A full NEPA needs to be conducted about the impact of this transmission line on these endangered species. Any herbicide application at all in this Karsts region could impact these endangered fish and mussels." (Ada Haynes)

Response: As stated in Section 3.3.3 of the EA, the sooty darter is the only state-listed fish that occurs in the affected watersheds along the proposed transmission line. It has been reported to occur downstream of City Lake. The occurrence of the clubshell mussel, the Cumberland bean mussel, the Cumberland combshell mussel, the fanshell mussel, and the oyster mussel are based on historic records, and these species may have been extirpated due to changing conditions of local streams. TVA takes measures to avoid contamination of groundwater and surface waters during construction (see Appendices B, C, and D) and during maintenance activities (see Appendix E). Precautions are also described in Section 4.5.2. The U.S. Fish and Wildlife Service has concurred with a determination of "not likely to adversely affect."

Category: Effects to Surface Water, Groundwater, and Geology

Comment #35: TVA does not know location of access roads and will not be able to avoid karst features. Construction of access roads will result in erosion despite protective measures. (Gary Davis)

Response: TVA has identified the locations of necessary access roads. They are shown in Figure 1 and Figure 5 in the final EA. As a matter of standard practice, TVA implements best management practices to control erosion.

Comment #36: There will be groundwater contamination and well contamination from construction and from herbicide application to maintain the right-of-way. (J. Mark Cantrell, Louise Gorenflo, Ada Haynes, Bower L. (Bob) Johnston, Barry Stein)

Response: Determinations of potential effects to groundwater from herbicide application are described in Section 4.5.2 of the draft and final EAs. As stated in that section of the final EA, TVA would take specific measures to avoid sinkholes and groundwater contamination when applying herbicides. These measures are described in Appendix E.

Comment #37: The Buck Mountain area supplies groundwater to the Falling Water River basin and residences in the Poplar Grove community and Rockwell Hollow below Buck Mountain, and the drinking water in these communities will be contaminated. (Gary Davis,

Paul Isbell, Ada Haynes, Barry Stein) "Because of the Karst features of the land, the multiple streams, and geography, it is likely that any contamination (e.g. herbicides or other toxins used by TVA on the vegetation on the route) to the transmission line route would contaminate the entire area." (Gary Davis)

Response: As stated in Section 3.5, the project area is in a karst region, and such areas are susceptible to contamination. During right-of-way maintenance, precautions would be taken to avoid contamination of surface water or groundwater. See, also, response to Comment 35 and Appendix E.

Comment #38: "We request that a full NEPA be conducted including dye studies of all caves and sink holes along the route." (Ada Haynes)

Response: The fact that the Buck Mountain area serves as a groundwater recharge area for the Falling Water River basin is well known. As described in Section 4.5, TVA would take measures to avoid contamination of groundwater. The requested dye studies would not add meaningful information to this review.

Comment #39: "There is no evidence that TVA did any sort of well survey, neither in assessing the number of wells in the area nor the quality of the water coming out of them." (Gary Davis)

Response: TVA has received information from the state concerning the number of wells in the local area. Section 3.5 has been amended to include this information.

Comment #40: "If this proposed transmission line were to be built, not only would residents have to contend with contamination from herbicides sprayed by TVA, they would have to deal with sedimentation issues as the transmission line is built." (Gary Davis) "Sediment will clog streams and threatened endangered species living in those streams." (Gary Davis)

Response: See Sections 4.4 and 4.5. TVA routinely applies measures to retard runoff and avoid or prevent erosion. As listed in Appendix G, the proposed route crosses three perennial streams over its 5.5-mile length. Because of the measures taken to prevent adverse effects to streams, the extensive impacts mentioned in the comment are highly unlikely. The U.S. Fish and Wildlife Service concurred with TVA's determination that federally listed as threatened or endangered species are not likely to be adversely affected (see Appendix A). In addition, see Section 2.2.2. regarding use of herbicides.

Category: Effects to Wetlands

Comment #41: "The sediment will also end up in wetlands and the watershed at the base of Buck Mountain, changing hydrology and damaging the watershed." (Gary Davis)

Response: As stated in the response to Comment #40, TVA employs measures to retard storm water runoff and to reduce the potential for erosion and sedimentation. Because of the distance between the proposed transmission line route and the nearest wetland area (Booger Swamp) and because of the preventive measures used by TVA to avoid sedimentation, changes in the hydrologic characteristics of any nearby wetlands are highly unlikely.

Comment #42: "It is the opinion of the Tennessee Wildlife Resources Agency that the Tennessee Valley Authority should mitigate for the conversion of 0.46 acre of forested wetland, Category 2 wetland, to an emergent/scrub-shrub wetland due to the loss of functional values associated with this conversion." (Robert Todd)

Response: As described in Section 4.7, TVA has determined that the conversion of 0.46 acre of forested wetland to emergent scrub-shrub does not require mitigation. Basic wetland functions would be maintained.

Comment #43: There are insufficient plans to deal with wetlands within the right-of-way. These areas are known heron habitat. (Ada Haynes, Barry Stein)

Response: See responses to Comment #17 and Comment #38.

Category: Effects to Archaeological and Historic Resources

Comment #44: "The cultural study provides no mention extensive historic and prehistoric Native American habitation along and around the transmission line route." (Ada Haynes)

Response: Tennessee was the site of extensive habitation by Native American peoples for thousands of years. Section 3.9 of the EA has been amended to provide additional historic background. A summary of the archaeological resources within the area of potential effects for the proposed transmission line is provided in Section 3.9.1. TVA determined that none of these archaeological resources were eligible for listing in the National Register of Historic Places. The Tennessee State Historic Preservation Office has concurred with this determination.

Comment #45: "The importance of this area for Native Americans has been reported in other TVA publications by the importance of this area for Native Americans was not acknowledged and studied for this report. Only a Level 1 survey was conducted of the area and the results of this shovel test was not included in the report. We would like to see a complete copy of the TVA contracted archaeologists report and also a complete copy of the TVA contracted biologists report. We were told that the full archaeologist report along with an explanation of methodology would be included in the draft Environmental Assessment. The absence of this information again is arbitrary and cupreous." …

"The complete archaeological report along with our report and our archaeological findings should have been presented to all Native American tribes and groups in Tennessee. Section 106 of the National Historic Preservation Act and other federal laws pertaining to Native Americans require TVA to consult with Native nations." …

"The Hockensmith report was not included along with the draft EA." (Ada Haynes)

Response: A Phase I archaeological survey and a survey of historic structures were conducted in consultation with the Tennessee State Historic Preservation Officer. The purpose of these surveys is to determine the presence of historic properties or resources within a defined area of potential effects and to determine if any of these resources are eligible for listing on the National Register of Historic Places. Results of these surveys are described in Sections 3.9 and 4.9 of the EA.

Precise locations and detailed descriptions of specific archaeological

resources were not provided in the EA in order to protect these resources, consistent with federal law. Appropriate Native American tribes have been consulted concerning archaeological resources (see Appendix A).

Comment #46: There would be adverse effects to archaeological and historical resources in the area. (J. Mark Cantrell, Ada Haynes)

Response: Section 3.9 contains a discussion of archaeological resources, including a synopsis of the findings of archaeological and historic structure surveys performed along the proposed transmission line and along the segment of existing transmission line proposed for sale. As stated in Section 4.9.2, TVA has determined that the proposed undertaking would not adversely affect any historic properties that are potentially eligible, eligible, or currently listed on the National Register of Historic Places. The Tennessee SHPO concurred with this determination.

Comment #47: A burial cave and burial mound are present, but were not mentioned in the EA. (Ada Haynes, Mary Mastin)

Response: TVA is aware of caves in the Buck Mountain area that contain human remains. None of these caves are near enough to the proposed right-of-way to be affected by the construction and operation of the transmission line. No burial mounds were detected within the defined project area of potential effects.

Comment #48: The presence of the Horse and Carriage Route, or Mail Route, on Brotherton Mountain, which is currently being considered for listing on the National Register of Historic Places, was not mentioned in the EA, and it would be affected. (Gary Davis, Ada Haynes, Barry Stein, Randal Williams)

Response: Sections 3.9 and 4.9 have been revised to more fully address this road. Adjustments to the preferred route were made to reduce potential impacts to this road.

Comment #49: "While TVA has acknowledged documentation of artifacts recovered in around the proposed transmission line and expert letters about the presence of extensive Native American habitation in this area from prehistoric time (8000 B.C. to 3000 B.C.) in the DEA, it does not take steps to follow Section 106. TVA makes the presumption in Section 4.9.2, without adequate investigation that the sites would not be affected by the proposed undertaking." (Gary Davis)

Response: TVA has complied with Section 106 of the National Historic Preservation Act. In accordance with Section 106, a Phase I survey was conducted. This survey was performed by TRC Inc. under contract to TVA and was conducted in consultation with the Tennessee State Historic Preservation Officer (SHPO). At the request of the SHPO, TVA performed additional field survey of an old road. Results of the surveys are summarized in Sections 3.9 and 4.9 of the EA. Results indicated that further investigation was not warranted. Based on the results of the survey, TVA determined that the proposed undertaking would not adversely affect any historic properties that are eligible or currently listed on the National Register of Historic Places. The Tennessee SHPO concurred with this determination (see Appendix A).

Comment #50: "The Buck Mountain area is rich in prehistoric and native American artifacts. Personnel performing the EIA utilized a very superficial methodology and yet evidence was found which should indicate a need for further investigation and study." (Paul Isbell)

Response: The Phase I archaeological survey of the area of potential effects was conducted by trained, experienced archaeologists using standard, accepted methodology. The survey was conducted in consultation with the Tennessee SHPO. As stated in Section 3.9.1, seven previously unidentified archaeological resources were identified during the survey. However, none of these resources were considered eligible for listing in the National Register of Historic Places. Thus, further investigation was not conducted or warranted.

Comment #51: "… a constituent has reported to me that there are intact American Indian burials in the route of the proposed Algood Power Supply Upgrade. This e-mail is to serve as notice of the reported burials before the end of the comment period."

"I am requesting a copy of the Hockersmith 2007 archaeological survey for this project, and a copy of the documentation showing compliance with Section 106 through notification of federally recognized American Indian nations and consultation with representatives of federally recognized American Indian nations." (Valerie Ohle)

Response: The archaeological survey did not reveal the presence of any burials within the area of potential effects. A copy of the requested report was supplied to Ms. Ohle. Documentation of TVA compliance with Section 106 of the National Historic Preservation Act regarding consultation with federally recognized American Indian tribes is provided in the final EA.

Comment #52: "Despite the fact that we provided considerable documentation of artifacts recovered in around the proposed transmission line and expert letters about the presence of extensive Native American habitation in this area from historic to prehistoric times (8000 B.C. to 3000 B.C) in our previously submitted comments (see Buck Mountain Community Organization Report opposing Proposed TVA/UCEMC High Voltage Power Line Across Buck Mountain – Prepared march 5, 2007) little or no mention is made of any efforts to investigate these types of cultural artifacts or investigate the presence of Native American Habitation, burial grounds, or burial caves in the areas. The presence of these artifacts and the cultural significance of this area for historic and prehistoric Native American habitation has been acknowledged in other TVA publications. The evidence already uncovered should warrant a full NEPA environmental impact study. Furthermore, we were assured that there would be a complete disclosure of the exact methods and findings associated with such investigations. The draft EA is quite vague and arbitrarily dismissive of any archaeological findings. TVA has also failed to consult with Native American groups about the evidence of Native American habitation in this area in violation of Federal section 106 regulations." (Barry Stein)

Response: As stated above, a Phase I survey was conducted in accordance with Section 106 of the National Historic Preservation Act. This survey was conducted in consultation with the Tennessee SHPO. TVA performed an additional field survey of an old road at the request of the SHPO. Results of the surveys are summarized in Sections 3.9 and 4.9 of the EA. Results indicated that further investigation was not warranted. Specific information about the location, character, or ownership of a historic property is not provided in order to protect

these resources, consistent with federal law. TVA consulted with appropriate Native American tribes (see Appendix A).

Comment #53: "With such an overwhelming amount of archeological and historic heritage, TVA must follow the requirements of Section 106 of the National Historic Preservation Act, which requires that TVA identify and evaluate historic properties, assess the proposed transmission line's effects of the properties, and make a plan to resolve the adverse effects. TVA should also take into consideration measures to avoid, and measures to minimize or mitigate adverse effects." (Gary Davis)

Response: TVA has complied fully with the requirements of Section 106. A survey of archaeological and historic resources was conducted in consultation with the Tennessee SHPO. Following that survey, TVA evaluated the findings and determined that the proposed undertaking would not adversely affect any historic properties that are eligible or currently listed on the National Register of Historic Places (see Section 4.9.2). The Tennessee SHPO concurred with TVA's determination (see Appendix A). Because there would be no adverse effects, no measures to avoid or mitigate such effects are necessary.

Category: Effects to Visual and Aesthetic Quality

Comment #54: Construction of the proposed transmission line would decrease the aesthetic quality of the Buck Mountain area. (Fred Ray, Peggy Evans, Hugh Mills, Michael Richardson)

Response: Potential effects to the visual and aesthetic quality of the proposed transmission line are described in Section 4.10.2.

Category: Effects to Recreation

Comment #55: Hidden Hollow Lake at the base of Buck Mountain would be contaminated by herbicides and other toxins sprayed by TVA. (Gary Davis, Paul Isbell)

Response: The ponds in the Hidden Hollow recreation area are located approximately 1,000 feet from the proposed transmission line route. Because the line traverses open land in this area, right-of-way maintenance would not require the application of herbicides for this portion of the route. As stated in the EA, TVA takes precautionary measures to avoid contamination of groundwater and surface waters when the application of herbicides is necessary for right-of-way maintenance.

Category: Socioeconomic Effects

Comment #56: Property values would decrease. (Fred Ray, Michael Richardson)

Response: Potential effects to property value are described in Section 4.12.2.

Comment #57: The proposed route is the most environmentally damaging of possible routes and it would needlessly destroy a number of homes and farms. (Cathy Dyer, J. C. Finch)

Response: The findings of the environmental review indicate that the preferred route has fewer overall environmental effects than the other identified routes. No homes

would be destroyed in the process of constructing the proposed line on the preferred route. Normal farming operations can continue within the right-of-way of the proposed transmission line.

Category: Global Warming

Comment #58: "TVA's draft EA gives short shrift to the Sierra Club's concerns regarding global warming and failed to include the IPCC report as requested in our March 15, 2007 comments." (Mary Mastin) Global warming is not addressed adequately. Climate change is a serious issue (courts are questioning if agencies have taken a "hard look" in their NEPA documents). (Ada Haynes, Paul Isbell, Mary Mastin)

Response: *The most recent version of the subject Intergovernmental Panel on Climate Change (IPCC) report is available on the Internet at:* http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf. *See Section 4.14 of the EA.*

Category: Health Effects

Comment #59: Spraying of toxins within one mile of Ada Haynes and many other residents will be a direct health threat. (Ada Haynes, Gary Davis) "TVA must take the health of the persons in the path of the transmission line before arbitrarily introducing toxins to their properties." (Gary Davis) "I am highly sensitive to chemicals and have difficulty breathing when exposed to chemicals. Spraying along this route could kill me. My husband has already been offered by one attorney to take my wrongful death suit once TVA or one of their subcontractors forgets and sprays along the route. It only would take one spraying and I could be dead. See the letter from my doctor, Dr. Donald Grisham. He has stated that spraying within a one-mile radius from house would be dangerous. Of course on a windy day or with different sizes of droplets or with a down draft from the propellers the herbicide could travel several miles." (Ada Haynes) "Additional health issues include the use of pesticides along the route. Even though TVA says that only EPA approved pesticides will be use, we do not know of any EPA studies that showed the health impact of people repeatedly drinking these pesticides in their ground water. In a Karsts region such as this where people still get their drinking water from wells and streams, this is a highly dangerous situations. Numerous lives could be impacted." (Ada Haynes)

Response: *TVA is aware of health concerns associated with the use of herbicides used for maintaining transmission line rights-of-way. The list of herbicides used and the method of their use are presented in Appendix E. In some situations, mechanical or hand clearing of vegetation is practical. In other cases, herbicides are administered either by backpack spraying or by aerial application. As stated in responses to previous comments concerning potential groundwater contamination, TVA regularly employs measures to prevent contamination of groundwater from application of herbicides or any other chemical treatments necessary for transmission line maintenance. Wide-scale contamination of drinking water from right-of-way maintenance is highly unlikely.*

Comment #60: "Along with the traditional concerns of high voltage power lines, there are additional health concerns with the preferred route that has been selected. Health issues such as childhood leukemia are widely documented. However, studies paid for by power

companies claim that there is no health impact from power lines. Of course, tobacco companies for years paid for studies that said that cigarette smoking was not hazardous to one's health." (Ada Haynes) "Another health issue for me as a diabetic is the impact of high voltage power lines on continuous glucose monitoring and insulin pumps. Again, if the high voltage power line causes my continuous glucose monitor to not work properly by not alerting me to either a high or a low blood glucose level, I could go into a coma or die. A similar situation could happen with my insulin pump which cannot even be exposed to MRI's. No research has been conducted on continuous glucose monitors and high voltage transmission lines." (Ada Haynes)

Response: *A discussion of potential health effects from exposure to electric and magnetic fields (EMFs) is provided as Section 4.13 in the EA. This discussion is based on research findings from various independent research organizations, including the World Health Organization.*

Newer medical implant and monitoring devices such as pacemakers, defibrillators, and diabetes control devices are shielded. As such, they are designed to provide continuous operation without interference from the vast majority of sources of EMF interference. These sources include electrical and electronic equipment that people would normally be exposed to either on a long-term, intermittent basis or as a continuous low-level exposure from low-frequency power lines, equipment, and machinery. The EMFs from modern-day electrical powered devices do not interfere with shielded medical devices.

Category: Miscellaneous Issues

Comment #61: "I would like to be assured that the old transmission line will be removed and the area restored when the new line is in place." (Dean Freitag)

Response: *As stated in Section 1.1 and Section 2.1.2 of the EA, TVA would sell Upper Cumberland Electric Membership Corporation a 1.6-mile section of the TVA West Cookeville-East Cookeville-Algood 69-kV Transmission Line. TVA would sell the line and structures but would retain the easement for the right-of-way. This line is expected to remain in service indefinitely. The final EA has been amended to clarify this point.*

Comment #62: "I agree with you regarding some environmentally sensitive areas and the desire to preserve them and limit environmental damage to all areas. I regret that some areas that are not regarded as environmentally sensitive will be disturbed." (William P. Bonner)

Response: *TVA is unsure of the specific areas mentioned here. As a routine part of its field review, TVA attempted to identify all environmentally sensitive areas that could be affected.*

Comment #63: "There are several trees along the proposed line that are 30+ inches dbh and stand over 100 feet tall. One of my hiking trails runs through this area. It will never be the same without the mature trees, but at least I hope the stumps and tree tops will be removed so the trail will be usable in the future. Also, trees will have to be removed along my driveway. The TVA land appraisers indicated these stumps and tree tops would be

chipped, but I have had people tell me that TVA would not be responsible for removing stumps and tree tops." (Bower L. (Bob) Johnston)

Response: Initial clearing of the right-of-way will include removal of all debris generated from the clearing activity, including treetops, limbs, and trunks. Stumps in finished areas, such as lawns and around your driveway, will be ground below grade level. Stumps in unfinished areas will be trimmed to within 4 inches of surrounding grade. A TVA employee will be assigned to the project to supervise initial clearing and coordinate resolution of property owner concerns.

Comment #64: "We have a right to know why this line has to go where TVA and UCEMC say it does. TVA and UCEMC have a responsibility to their customers especially and to all of Putnam County to work with folks in the line of proposed construction and to lessen environmental impacts where ever they can. I think it's a shame how you all are trying to bulldoze this transmission line through." (Lawrence R. Klem)

Response: The proposed project is described in Section 1.1 and in Section 2.1.2. Public involvement is described in Section 1.4. Measures designed to reduce the potential for adverse environmental effects during construction and maintenance of the proposed transmission line are provided as Appendices B, C, D, and E.

Comment #65: "In the proceedings by TVA to condemn the land I was given 20 days to raise any objections before the land was taken. This motion was filed July 6, 2007. I was then sent a letter on the 13 of July signed by a federal judge giving TVA possession. This was only 8 days." (Harold Boswell) "I feel that my land is being taken away without documented justification presented to me." (Janice Boswell)

Response: The letter you received dealt with giving TVA the right to access your property for the environmental review and for survey work. TVA has not taken possession of your property; you remain the owner of the property. The action by the court was necessary because TVA was unable to contact you to secure permission to have personnel on your property for the subject surveys.

Comment #66: "The following comment form TVA's Draft Assessment is incomprehensible, While this statement implies that no Karsts features are located where there will be proposed access roads, since the entire mountainous area covered by the proposed transmission line has Karsts features, this is impossible."

"No karst features were found within the areas of the proposed access roads. Neither the proposed transmission line no the proposed access roads are located not within a state designated source water protection area. Residential wells may occur near the project area (TVA Draft EA)." (Ada Haynes)

Response: The referenced excerpt contained two typographical errors, and we apologize for any confusion this may have caused to readers. These errors have been corrected in the final EA. The term "karst feature" as used in the EA refers to well-defined features, such as sinkholes and caves, which are obvious from the surface. The state establishes source water protection areas. In such areas, special care must be taken to avoid groundwater contamination because these areas serve as groundwater recharge areas and are

susceptible to contamination. As stated in the EA, no such designated areas occur within the proposed right-of-way or within any proposed access roads.

Comment #67: "I wish to thank you in advance for your time and attention to my comments. In particular, the attorney representing my wife and I in this matter proposed an alternate solution to this project. His proposal was developed after extensive meetings, site visits, and consultations. I should mention that it also came at a considerable cost to my family. That solution would have saved significant funds (estimated to be more than $3 million) for TVA in terms of property acquisition costs. In addition, it would have provided a back up power source for Algood (as well as Cookeville) should the line fail. This has happened at least once in the past after a pole was struck by a car. In this alternate proposal, the property, environmantal, and personal impact created by the existing route all but goes away. While it may seem unlikely that an attorney could propose a meaningful alternate solution to address whatever issues are driving this new power project, I should tell you that he is a former TVA counsel who has worked on many similar projects. Our attorney, Mr. Herb Sanger, made his proposal personally to TVA staff members during a meeting in Chattanooga. I do not believe that his alternate proposal was given fair and equal consideration compared to the current route and project. My specific request is for you to reconsider his suggestions and then specifically address the reasons why TVA chose to continue on with the project as proposed. Once again, thank you for your consideration in this matter." (Sullivan Smith)

Response: The alternate solution described in this comment includes a combination of building a temporary line to the Algood 69-kV Substation and rebuilding the Algood 69-kV Transmission Line as a 161-kV line. The temporary line would have many of the same impacts as the proposed line. See Section 2.1.3 for a discussion of rebuilding the Algood line.

Comment #68: "Based on available information concerning the proposed TVA Algood 161-KV Transmission line, we were able to determine that the project will run within approximately 2,000 feet of park and recreational areas funded through the State of Tennessee in the City of Algood." (Mark Tummons)

Response: Because of this comment, TVA is now aware of a state-funded project involving the construction of a trail from Algood to Monterey along an old railroad bed. The subject railroad bed is approximately 2,000 feet from the proposed transmission line route, and intervening vegetation and topography would generally obscure views of the line from the proposed trail. Sections 3.11 and 4.11 of the final EA have been revised accordingly.

Comment #69: There are listed species within 4 miles of the proposed project. TVA should survey the route and coordinate with the Tennessee Wildlife Resources Agency and the U.S. Fish and Wildlife Service. (Silas Mathes)

Response: The state-listed or federally listed species known to occur near the proposed project are listed in Tables 4, 5, and 6 of the final EA. The green salamander was not included in Table 4 because it has no federal or state status. Likewise, the goldenseal was not included because of its state rank (S3 – "rare and uncommon, 21 to 100 occurrences, statewide"). This species is at risk from commercial exploitation rather than from loss of habitat. TVA relies on a review of its Natural Heritage database listing of protected species as well as

the results of on-site field surveys to determine the presence of threatened and endangered species and their habitats. The information in TVA's Natural Heritage database is coordinated with the U.S. Fish and Wildlife Service (USFWS) and is routinely updated to ensure that it is accurate and contains available information about sensitive species.

Several commitments and mitigation measures listed in Section 4.18 of the final EA are designed to avoid or prevent adverse effects to rare species.

The presence of karst features in the area is discussed in Section 3.5 of the final EA. Potential effects to groundwater in karst terrain are discussed in Section 4.5.2.

A copy of the draft EA was sent to Mr. Todd at the Tennessee Wildlife Resources Agency.

A copy of the draft EA was furnished to the Cookeville office of the USFWS. TVA consulted with USFWS regarding potential effects to threatened and endangered species resulting from this project. USFWS concurred with the TVA finding of "not likely to adversely affect" (see Appendix A).

Responses to Statement by Peter J. Lanzalotta

This addresses the statement submitted by Mr. Lanzalotta about the need for the proposed action. Mr. Lanzalotta's statement is reproduced below in its entirety. Responses are provided to the portions of the statement that contain substantive comments.

1. Qualifications

My name is Peter J. Lanzalotta. I am a Principal at Lanzalotta & Associates LLC, 67 Royal Pointe Drive, Hilton Head Island, SC 29926.

I am a graduate of Rensselaer Polytechnic Institute, where I received a Bachelor of Science degree in Electric Power Engineering. In addition, I hold a Masters degree in Business Administration with a concentration in Finance from Loyola College in Baltimore.

I am a Principal of Lanzalotta & Associates LLC, which was formed in January 2001. Prior to that, I was a partner of Whitfield Russell Associates, with which I had been associated since March 1982. My areas of expertise include electric utility system planning and operation, electric service reliability, cost of service, and utility rate design. I am a registered professional engineer in the states of Maryland and Connecticut. My prior professional experience is described in Exhibit PJL-1, which is attached hereto.

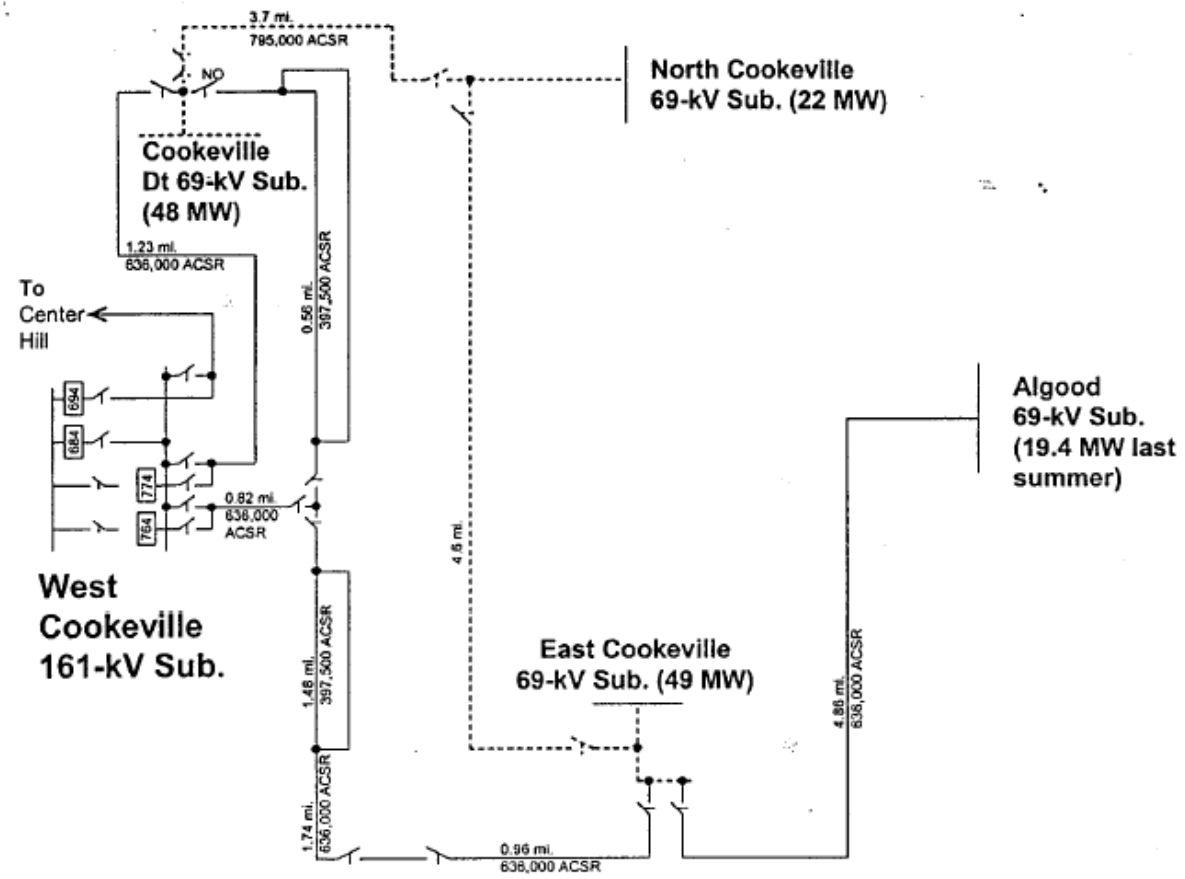
I have been involved with the planning operation, and analysis of electric utility systems and with utility regulatory matters, including reliability-related matters, certification of new facilities, cost of service, cost allocation, and rate design, as an employee of and as a consultant to a number of privately- and publicly-owned electric utilities, regulatory agencies, developers, and electricity users over a period exceeding thirty years.

I have presented expert testimony before the Federal Energy Regulatory Commission and before regulatory commissions and other judicial and legislative bodies in 21 states, the District of Columbia, and the Provinces of Alberta and Ontario. My clients have included utilities, regulatory agencies, ratepayer advocates, independent producers, industrial consumers, the federal government, and various city and state government agencies. The proceedings in which I have testified are listed in Exhibit PJL-2.

2. Existing Facilities – Capabilities & Historical Loads

Figure 1 below depicts the critical transmission level facilities with respect to the need for a new Algood substation

Figure 1



a. The West Cookeville 161-69 kV substation supplies two 69 kV circuits: the first which supplies Cookeville District ("Dt" in Figure 1 stands for "District") substation and North Cookeville substation, and the second which supplies East Cookeville substation and Algood substation. West Cookeville has 161 – 69 kV transformer capacity of about 153 MVA. Its 2006 peak load was about 144 MVA and, according to a recent letter from TVA, its 2007 peak load was 150.4 MVA. The Cookeville Electric Department ("CED") receives supply from the West Cookeville substation which is owned by TVA, while Upper Cumberland Electric Membership Cooperative ("Upper Cumberland") also contracts for capacity from West Cookeville substation. Upper Cumberland owns and operates the Algood substation.

b. The Algood 69 - 13 kV substation has two transformers with 18.67 MVA of capacity each. Total transformer capacity is, therefore, 37.34 MVA but firm transformer capacity, which provides for the forced outage of one of these transformer, is only 18.67 MVA. However, Algood has other sources of supply for its 13 kV loads. Each of the four 13 kV circuits connected to Algood substation is considered a major feeder tie to a neighboring substation, on which Upper Cumberland typically reserves 50% of the circuit capacity as backup. According to the Peak Loading Table on page 2 of the One Ownership Study for the Algood Substation dated July 2006 and

prepared by PowerTech Engineering LLC for Upper Cumberland, all four of the Allgood 13 kV circuits are considered major substation ties on which some 25,352 MVA of capacity, or 50% of these circuits total thermal rated capacity, is reserved for backup capability[1]. This increases the firm winter 13 kV load carrying capability of the Allgood substation from 18.67 MVA of firm transformer capacity to 18.67 + 25.35 or 44.02 MVA of total firm capacity. This rating reflects winter conditions. If the 13 kV circuit capacity is reduced to reflect summer conditions, the total 50% of reserved capacity of the four Algood 13 kV major tie feeders decreases to 19,501 MVA, and the firm summer 13 kV load carrying capability of the Algood substation becomes 18.67 + 19.501 or 38.17 MVA of total firm capacity.

The 2003 winter peak load was 24.2 MVA. The 2006 peak load at Allgood was reported to be 19.42 MVA and occurred in the summer.

[1] 5,867 + 5,867 + 5,867 + 7,751 = 25,352 MVA. These reflect winter ratings which were increased by 30%. Without this increase, this total becomes 19,501 MVA, which reflects summer ratings.

Response: Although mathematically, each feeder would have a 50 percent reserve factor based on thermal ratings, from a practical engineering viewpoint, acceptable voltages cannot be maintained when fed from these remote substations. UCEMC does not have the ability to transfer additional loads away from Algood. This is due to loading on other substations and annexation issues, which will likely require UCEMC to remove all load from the closest substation to Algood (i.e., the Cookeville District Substation, which is across town from Algood). The plan currently calls for UCEMC to construct another substation on the west side of Cookeville. This new substation could be located outside Cookeville's Urban Growth Boundary to avoid service area conflicts between UCEMC and CED. This would not help with the ability to transfer load from Algood due to the distance between sources.

c. West Cookeville to East Cookeville 69 kV transmission line

The 69 kV line from West Cookeville substation to East Cookeville substation has a capacity 77.1 MVA. This line supplies the East Cookville substation's load as well as the Algood substation load. Peak load in the summer of 2006 was about 68 MVA."

Response: The loading on the West Cookeville-East Cookeville 69-kV Transmission Line is projected to be 84.2 MVA during the summer of 2008. This figure includes 7.81 MW of anticipated new load. Loading is expected to be 77 MVA without any new load.

3. Proposed Facilities – New Algood substation & new 161 kV transmission line

Upper Cumberland has proposed abandoning the existing Algood substation and building a new Algood substation close by to be fed by a new 161 kV radial transmission line. The new Algood substation would have two transformers and six 13 kV circuits, compared to four for the current Algood substation.

Response: The new Algood substation would provide firm transformer capacity and six 13-kV feeders to provide a higher level of service with less losses and improved reliability and voltage regulation.

4. Need For Proposed Facilities

a. Documents prepared in or about 2006 projected some 8 MVA of new loads that were expected to be added to the electric system at or in the vicinity of the Algood substation by the summer of 2008.

At the time these projections of 8 MVA of new load were being made, there were three concerns expressed by TVA and Upper Cumberland about the potential overloading of local facilities: (i) overloading of the 161 – 69 kV transformers at the West Cookeville substation, (ii) overloading of the 69 kV transmission line from West Cookeville substation to East Cookeville substation, and (iii) the loading of the Algood substation transformers and 13 kV distribution circuits.

b. The historical loads on these facilities in the period leading up to 2006 showed relatively little apparent load growth. For example, the loading on the West Cookeville transformers actually decreased over the period of time from 2001 to 2006, although TVA recently provided a summary of the 2007 loads which showed some increase in 2007.

The loads on the Algood substation transformers showed about 3 MVA of loading growth from 2003 to 2006 in one document (Project Justification Data), while they show a decrease from 24.2 MVA in 2003 to 19.4 MVA in 2006 in another (PowerTech Engineering Study).

The loads on the West Cookeville to East Cookeville 69 kV line also showed only a few MW of load growth over the period 2003 to 2006"

Response: The loading on the West Cookeville transformer bank decreased from 2001 until 2004 because the City of Cookeville placed the new South Cookeville Substation in service in 2001 and began transferring load until the circuit limitation was reached in 2004. The loading on the West Cookeville transformer bank has increased each year since 2004.

The historical loadings on the Algood transformer listed in the Project Justification Data are the summer peak loads, while the listings in the PowerTech Engineering Study are stated as winter peaks.

The loading on the West Cookeville-East Cookeville Transmission Line decreased from 2003 until 2004 because the City of Cookeville placed its new South Cookeville substation in service in 2001 and began transferring load until the circuit limitation was reached in 2004. The loading on the West Cookeville-East Cookeville 69-kV transmission line has increased each year since 2004.

b. Now, the 8 MVA of projected new loads are apparently not going to materialize. These projected load additions were either never firm projects or economic conditions have changed since 2006. The December, 2007, Comments on TVA Draft EA For Algood Transmission Line by Dr. Barry Stein ("Stein Comments") states that there currently is no evidence of any new industry or major new apartment complexes moving into the area that would cause an 8 MW increase in peak demand at the Algood substation.

Despite the apparent loss of this 8 MVA of new loads, TVA still suggests that a need exists to relieve the loading of the West Cookeville substation.

Response: Please see the response to Comment #3b.

c. The City of Cookeville is in the process of annexing some 1,200 or more electric customers from Upper Cumberland, many of whom are currently served from the Algood substation. None of the studies to justify the Algood substation that have been provided by TVA or Upper Cumberland address the impact of these annexations. Normally, 1,200 residential customers would be expected to put between 3.5 to 5 MVA (based on an estimated 3 to 4 kW per customer) of load on the electric system. The transfer of these customers from Upper Cumberland to the CED could be expected to reduce loads on facilities serving Upper Cumberland, including the Algood substation.

Response: Please see response to Comment #3c.

5. Available Alternatives To Proposed facilities

a. Documents touting the need for a new Algood substation describe TVA's joint one-ownership policy, which provides that distributors (such as Upper Cumberland) and TVA shall be guided by the policy of providing the most economical combinations of transmission and distribution facilities in solving certain transmission or distribution system problems. (Project Justification Data) There are serious questions about whether the proposed Algood substation and 169 kV transmission line are the most economical solution to transmission system reinforcement needs, or whether projected system reinforcement needs even still exist.

The One Ownership Study prepared by PowerTech Engineering to provide justification for the new Algood substation compares costs for a list of alternatives without ever considering the cost of the transmission line needed to serve the Algood substation. Considering that this transmission line should be expected to cost several million dollars, this is a serious omission if the most economical solution to system problems is truly the goal.

In addition, this study treats abandoned facilities in an inconsistent fashion as well. When the replacement of the existing transformers at West Cookeville substation is evaluated, that option is charged with $270,000 to write off the remaining life of the existing transformers. When the construction of the new Algood substation is evaluated, that option is credited with more than $1.3 in foregone facilities charges for the abandoned substation facilities in the existing Algood substation. It is not clear why this option was not charged for the remaining life in these facilities.

Response: The One Ownership Study prepared by PowerTech Engineering was used to provide pertinent financial information to a Joint One-Ownership study that was completed by TVA. In this Joint Study, the cost of the transmission line was combined with the distributor's cost, and a 20-year engineering economy study was performed. In this analysis, the $1.3 million in Facilities Rental charges was not included. The remaining life of equipment is reflected in the economic analysis according to Engineering Economy principals.

b. The CED currently has available substation and transformer capacity installed at its South Cookeville substation, which is available to help reduce loads at the West Cookeville substation. The South Cookeville substation is not fed through the TVA West Cookeville substation, but has a direct connection to TVA's 161 kV line. In a September 2007 letter to TVA, the CED asks permission to run two 13 kV underbuild circuits along the TVA Monterey to Cookeville 69 kV transmission line. This would enable (i) the transfer of 7 to 8 MVA of load from East Cookeville substation to South Cookeville substation and (ii) the transfer of 8 to 9 MVA from the Cookeville District substation to South Cookeville substation. This would result in a maximum reduction of 16 MVA in West Cookeville substation loads. (9/24/07 letter from Cookeville Electric Department to TVA)

A reduction in the loads on the West Cookeville substation of 16 MVA eliminates the need for further reinforcement of the West Cookeville substation. This load reduction would be accomplished by using existing substation capacity that is already installed and available. Surely, it is more economical under a one system concept to use existing substation transformer capacity than it is to build new substation capacity and leave the existing capacity idle.

This alternative would also reduce the loads on the West Cookeville to East

Cookeville 69 kV transmission line by 7 to 8 MVA, thus providing additional margin below the maximum capability of this line and pushing out into the future any need to increase the capacity of this line or to further reduce loads served by the line.

Response: *TVA and CED are reviewing the possibility of implementing a CED plan to remove some load from the TVA West Cookeville Substation. The plan involves construction of two distribution feeders from the CED South Cookeville Substation to the line between the TVA West Cookeville Substation and the CED East Cookeville Substation. The two feeders would be constructed underneath the existing line for several spans and then branch off towards Cookeville District and the eastward towards the newly annexed area. CED is projecting to be able to pick up as much as 16 MVA of load on these two feeders. TVA has provided estimates for TVA's portion of the plan and CED would decide whether to continue with this plan.*

This proposal would provide some temporary relief at the West Cookeville Substation. However, load growth in the Cookeville area will likely load these transformers to capability within 3 to 4 years in the absence of the new Algood 161-kV Substation. At least three delivery point projects, including South Cookeville, have been completed since 1997 to remove load from the West Cookeville Substation. Nevertheless, area growth continues to push the transformers in the West Cookeville Substation to capacity.

c. As initially mentioned above, the City of Cookeville is in the process of annexing some 1,200 or more electric customers from Upper Cumberland, many of whom are currently served from the Algood substation. Normally, the loss of 1,200 residential customers would be expected to remove several MVA of load from the Upper Cumberland electric system. The transfer of these customers from Upper Cumberland to the CED could be expected to reduce loads on facilities serving Upper Cumberland, such as the Algood substation. The loads on the Algood substation will be reduced as a result of these annexations. TVA needs to take into consideration the loss of these electric customers and electric loads in its assessment of need for the new transmission line and substation. At present, there is no indication that this has happened.

Response: *Please see the response to Comment #3c.*

d. Tennessee Technological University ("TTU") is located in the City of Cookeville and is believed to be served out of the West Cookeville substation. TTU has recently installed 8 MVA of diesel generation which is available to be used to reduce area peak loads on electric transmission and substation facilities. The draft Environmental Assessment mentions the possibility that distributed generation could be used to unload the Algood substation, and then dismisses this possibility by saying that:

> Because of the uncertainty over costs, the lack of control over reliability of the power supply, and other factors, TVA does not consider a distributed power generation alternative to be a viable option and eliminated this option from further consideration in the environmental review.

While TVA set up and rejected a generic idea of distributed power generation, there is no evidence that TVA or Upper Cumberland considered the specific possibility suggested by Buck Mountain Community Organization and TTU of using the 8 MVA of existing TTU generation to help unload the area transmission and substation facilities. Certainly, the fact that these generating units are already built and in place should help remove much of the uncertainty over costs. As for the lack of control over such facilities, how does TVA know how much control TTU is willing to grant over the operation of these units until they investigate the subject with TTU? And, how does this lack of control excuse integrate with the joint one-ownership concept? If local generation exists and is ready to operate, it is potentially less expensive and more reliable to operate such generation during periods of peak loading than it is to build additional transmission and substation capacity just so that additional power can be brought in from the outside, where this power would have to be generated anyway.

TVA has reportedly already made use of this TTU diesel generation during a time when TVA was having trouble supplying system loads due to very hot weather conditions during the summer of 2006, soon after these units were installed. It is short-sighted to not consider the use of these generating units now to help reduce loads on the electric facilities in the Cookeville area.

Response: See Section 2.1.3.

e. A system reintegration plan prepared by or for Upper Cumberland in 2004 suggests that a new 161 kV substation will be needed in the area to the west of the City of Cookeville, and that this substation will provide support at the 13 kV level to other Upper Cumberland substations located around the City by means of a high capacity distribution loop around the City. The existing Algood substation would be part of that loop and would receive reinforcement from it.

The effects of such a system reintegration plan on the loads on the Algood substation were not mentioned in any of the studies of the need for the new Algood substation. It is not clear whether Upper Cumberland intends to build the proposed new substation to the west of the City of Cumberland, or what such construction would supply to the Algood substation in the way of reinforcement if it is built. However, the possibility that other planned system reinforcements could help reinforce the Algood substation should be considered before a new Algood substation is committed to.

Response: Please see the response to Comment #3d.

6. Availability of Data

In the course of trying to review the need for system reinforcement at the Algood substation, we requested 2007 peak load data on facilities whose overloads were being used as justification of the need for the new Algood substation. We were provided with 2007 load data for the West Cookeville substation but were told that load data for other facilities was too sensitive to provide, or would require the approval of Upper Cumberland (which apparently has not been forthcoming). When approval for new facilities is based on the need to relieve overloaded facilities, the most recent historical loads on these facilities are commonly available for review and analysis in proceedings before public utility commissions.

Response: Please see the response to Comment #3.

7. Conclusion

It is my professional opinion, based upon the information that I have reviewed, that, had this been a certificate of need proceeding before a public utility commission, all of the data concerning the need for the proposed facilities would have been available for review and analysis by experts. At the very least, before making a decision on the proposed new facilities, TVA should analyze the need and all of the available alternatives in a transparent manner.

Based on the data that is available, it is not clear that the substation facilities at the Algood substation still need reinforcement, given the apparent disappearance of the projected new loads and the failure to reflect the effects on Algood substation loadings of the annexations by the CED of electric loads now served by Upper Cumberland. Additionally, it is clear that there are options for reducing the loads at the West Cookeville substation that make use of existing facilities, such as the South Cookeville substation or the TTU diesel generation, that do not appear to have been considered.

Response: The need for the proposed actions is described in Section 1.2 of the EA. Other options were considered (see Section 2.1.3). Unfortunately, none were as effective at meeting the need as the Action Alternative.